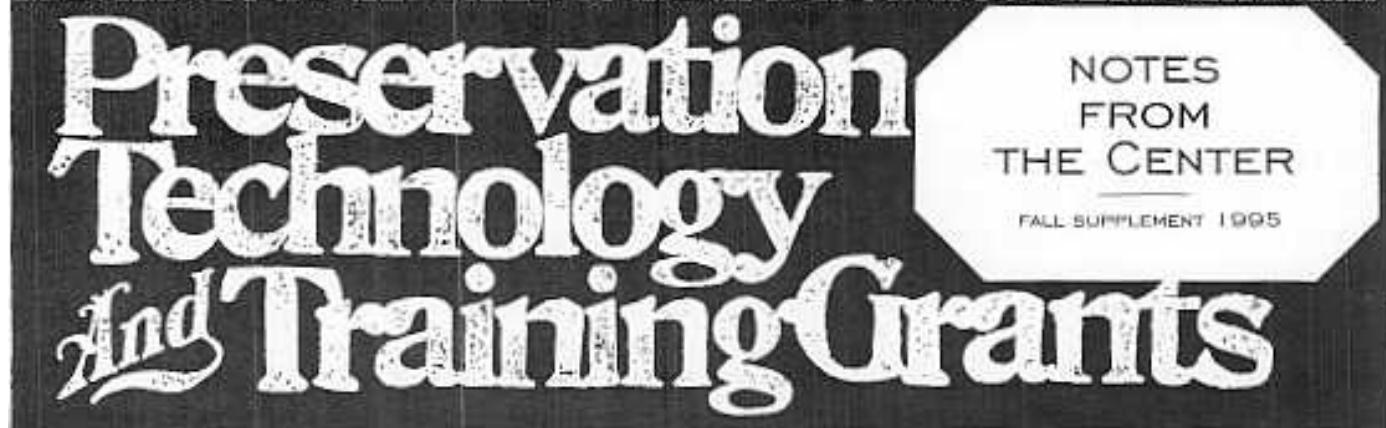


United States Department of the Interior  
National Park Service

# NCPTT

NATIONAL CENTER FOR PRESERVATION TECHNOLOGY AND TRAINING



As THE CENTER begins work on its next round of **Preservation Technology and Training Grants**, this edition of *Notes from the Center* highlights the Center's first three years of PTTGrants. The request for proposals for **1996 PrTGrants** is featured on page 2; announcement of **1995 PrTGrants** awards begins on page 2; a recap of our **1994 PrTGrants** recipients begins on page II.

NCPTT's grants program was established in the Congressional legislation that created the Center itself: *The Secretary [of the Interior], in consultation with the [Center's Preservation Technology and Training] Board, shall provide preservation technology and training grants to eligible applicants with a demonstrated institutional capability and commitment for the purposes of the Gentle; in order*



*to ensure an effective and efficient system of research, information distribution and skills training in all the related historic preservation fields.*

Our PTTGrants program is one of the few preservation and conservation grants programs devoted to training and basic research, and is unique in its interdisciplinary approach. In a brief time, the preservation and conservation community's support for the PTTGrants program has grown tremendously. We look forward to working with our colleagues to distribute the results of PTTGrants work and to encourage high quality proposals that meet the preservation community's highest-priority needs.

**-Elizabeth A. Lyon**

*Chair; Preservation Technology and Training Board*



IN 1996, NCPTT again is pleased to offer **Preservation Technology and Training Grants** to the preservation and conservation community towards advancing the art, science and craft of historic preservation.

Grants will be awarded for work in **historic architecture, archeology, materials conservation, historic landscapes and history**. Grants will be awarded **research** and in **training** - as in the past two years --and, beginning this year, in **information management**.

Grants will be awarded competitively from proposals submitted to NCPTT. **The postmark deadline for 1996 PTTGrants applications is December 22, 1995.** (Note that this is a change from the

previously publicized deadline of December 15, 1995.)

The complete 1996 PTTGrants announcement - including the request for proposals and instructions on how to prepare and submit applications - is available exclusively via **NCPTT's fax-on-demand computer** and **NCPTT's Internet gopher**.

**Via fax**, telephone NCPTT's fax-on-demand computer **at 318/357-3214**, and follow the recorded instructions to receive a 1996 PTTGrants announcement by return fax.

**Via gopher**, the address is **gopher.ncptt.nps.gov**; the 1996 PTTGrants announcement is posted under *About the Center.../Announcements/Grant*

announcements.



At the end of fiscal year 1995, NCYT awarded 31 historic preservation grants for research and training projects. Awards totalled over \$900,000.

The awards were selected from over 200 applications solicited by a request for proposals that was advertised nationwide. Each proposal was evaluated by three peer reviewers selected from a pool of experts nominated by organizations that submitted proposals. Final awards selection was made by an interdisciplinary panel convened by NCPTT's Preservation Technology and Training Board. The selection panel considered the results of the peer review plus

NCPTT's needs to implement its mission and purposes.

All 1995 YTTGrants proposals were high-quality and worthy of support, and awards were made to the full extent of available funding. Awards were made in all of NCYT's preservation disciplines, to preservation and conservation organizations throughout the United States.

The following abstracts of the 1996 PTTGrants awards were adapted and expanded from the proposals by **Frances Gale**, NCPTT's training coordinator, and **Mark Gilberg**, NCPTT's research coordinator.



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#### Preservation Skills Training

*Historic Windsor, Inc.*

*Windsor, Vermont*

*\$40,000*

##### *Project abstract*

Historic Windsor's Preservation Institute for the Building Crafts will design, market and implement seven courses that will be held in Natchitoches or nearby. Using curricula and faculty from Historic Windsor, the courses will include plaster repair, brick repointing, and 19th century woodworking for an audience of professional builders and maintenance staffs from historic sites, colleges and museums in the ArkLaTex region.

##### *Project significance*

Training designed for tradesmen and maintenance staff increases the pool of qualified people to work on our nation's historic resources. Using Historic Windsor's existing curricula and faculty for skills training in ArkLaTex region a cost-effective way to increase expertise in an under-served area.

#### Preserving Our Endangered Past *Slater Mill Historic Site*

*Pautucket, Rhode Island*

*\$19,813*

*Project abstract*

Slater Mill Historic Site will conduct a training project on the conservation of historic buildings and their furnishings. The project will bring together experts in the conservation of buildings, textiles and furniture to address current issues. Museum professionals and graduate students will be invited to participate. This series of three workshops will be geared toward providing low-tech, low-cost sites across southern New England.

*Project significance*

During the training sessions, preservation experts and museum professionals will work together to develop appropriate maintenance programs for historic buildings and their

collections. The workshops will establish a much needed dialogue between conservators and museum professionals in the region. By creating and implementing the workshops, Slater Mill Historic Site will provide a blueprint for other institutions.

**A Multimedia Approach to Book Repair Training**

*Baker Library Preservation Committee, Dartmouth College*

**\$6,290**

*Project abstract*

The Baker Library Preservation Committee of Dartmouth College will convert their book repair training manual to a multimedia training presentation accessible on the Internet through the World Wide Web. These training materials will supplement training in book repair techniques for library and museum staff.

*Project significance*

Although there are several excellent manuals and books on simple repair, none provides a visual demonstration of repair procedures. This project will make book repair procedures accessible through the Internet. A user can view step-by-step video images of repair procedures at his or her own pace and will have access to related book conservation resources. The multimedia presentation will enhance training for conservation students and will serve as a refresher for conservation professionals.

**Comprehensively Diagnosing Moisture in Historic Buildings**

*The Friends of Meridian Hill Washington, DC*

**\$40,000**

*Project abstract*

This project will develop technical training for comprehensively examining the sources of moisture that contribute to deterioration of historic properties. Training will focus on diagnostic tools for moisture monitoring, including tools used in other industries that can be adapted for use at historic sites. Monitoring will be conducted on exteriors and interiors. Following a symposium for a small group

of professionals, a training manual will be designed for use by other organizations.

*Project significance*

There is no systematic methodology for identifying the sources of moisture that contribute to deterioration in historic buildings. This training will provide a comprehensive approach to diagnosing moisture problems. By focusing on methodology, the training manual and video can be used at sites in other regions.

**Training for Instructor's**

**Certificate in the Building Trades**

*Historic Preservation Program, University of Vermont*

**\$33,401**

*Project abstract*

The University of Vermont's Historic Preservation Program will work with Historic Windsor's Preservation Institute for the Building Crafts in developing a week-long pilot course for vocational school teachers. This three-credit course will help instructors to integrate historic preservation into building trades curricula. The course will meet continuing education requirements for teachers to maintain certification and will serve as a basis for future related courses.

*Project significance*

High school and post-secondary building trades courses focus almost exclusively on new construction skills rather than historic preservation and architectural conservation. Preservation work requires skills, knowledge of materials, and philosophical judgments different from those used in new construction. Vocational school teachers who are knowledgeable about historic preservation sometimes perceive preservation work as highly specialized and beyond their students' abilities. The Historic Preservation Program and Historic Windsor will create a course of study to teach vocational school teachers historic preservation philosophy, skills, materials and technology. The course will introduce ways that this knowledge can be translated into the vocational education classroom.

A training video: Lead-Based Paint





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Abatement in Historic Structures  
*Maryland State Historic Preservation Office*  
\$19,500

*Project abstract*

The Maryland State Historic Preservation Office in collaboration with the National Park Service's Williamsport Preservation Training Center will produce a video on lead-based paint abatement for owners of historic properties, preservation craftspeople, contractors, and historic site maintenance personnel. The video will present paint removal techniques, worker safety procedures, and methods for disposing of lead-containing residues that can be used in work that meets the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

*Project significance*

Lead-based paint abatement is an important issue for owners and managers of historic properties. A survey of industry and preservation experts indicates that there is no up-to-date lead paint removal technique training video available. The lead-paint abatement video produced by Maryland State Historic Preservation Office and Williamsport Preservation Training Center will complement Preservation Brief 37 -- *Appropriate Methods for Reducing Lead Paint Hazards in Historic Housing* -- recently published by the National Park Service's Preservation Assistance Division.

**Culture Shock: Fire Protection for Historic and Cultural Property**  
*Boston University*  
\$10,000

*Project abstract*

Boston University will produce a training video to raise awareness of fire risks to cultural properties and to provide technical information about fire detection and suppression systems including sprinklers, gaseous agents and water mist. The video also will show examples of institutions that have sensitively installed appropriate devices. Professionals from the fire protection and cultural communities will participate in the project.

*Project significance*

Fire attacks cultural properties- including historic buildings, museums, and libraries- at an alarming rate. **In** many fires, extensive damage from flames, smoke and water is due to insufficient or inappropriate fire detection and suppression systems. Unfortunately, there is little training available for managers of historic properties and their service providers. The video produced in this project will provide information about appropriate fire protection equipment and how it can be installed sensitively.

American Indian Voices in  
Preservation Training  
*Crow Canyon Archaeological  
Center*  
*Cortez.. Colorado*  
\$19,320

*Project abstract*

A growing number of Native American tribes are establishing cultural preservation offices and museums. Among their responsibilities is preservation of archeological sites and artifacts. The Crow Canyon Archaeological Center will develop a workshop to train technicians and other tribal office and museum staff members in recording, cataloging, curation, and site preservation methods. This PrrGrants award will fund an initial meeting of Native American and preservation experts to discuss preservation issues, and a subsequent workshop to design a preservation training program that meets the needs of Native Americans and archeologists.

*Project significance*

Native American tribes are assuming new roles in the preservation community as a result of legislation such as the 1992 amendments to the National Historic Preservation Act, the substitution of tribal regulations for Section 106 regulations- with Advisory Council approval-, NAGPRA which assures the return of funerary remains and artifacts, and certain provisions of the American Indian Religious Freedom Act. The proposed workshop will address these preservation

issues from a Native American as well as an archeological perspective. Because tribes outside the Southwest will be included in the planning meetings, the resulting preservation training program can be adapted for use in other regions of the United States.

**A regional seminar in landscaping for historic properties**

***Southern Cultural Heritage Foundation***

***Vicksburg, Mississippi***

***\$6,850***

***Project abstract***

Affordable, in-depth training sessions on historic landscapes are not widely available in the South outside of the academic environment. The Southern Cultural Heritage Foundation will coordinate a training session on landscaping for historic properties for owners and managers of historic properties, landscape architects, faculty, students, and preservationists. The two-day training session -entitled Landscaping for Historic Properties- will focus on planning, implementing and maintaining appropriate environments for historic properties with an emphasis on practical applications.

***Project significance***

By offering training with practical approaches to preserving and restoring historic landscapes, the Southern Cultural Heritage Foundation will help to improve and expand skills in preserving and interpreting these important cultural resources.

**Three-Dimensional Coordinate Measurement of Historic Artifacts**

***Mystic Seaport Museum, Inc. Mystic, Connecticut***

***\$23,821***

***Project abstract***

Mystic Seaport Museum, the Smithsonian Institution and the Hart Nautical Collections at Massachusetts Institute of Technology will undertake a cooperative training program in the application of coordinate measuring machine technology to document three-dimensional half models in their



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American Indian Voices in Preservation Training  
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*Cortez, Colorado*  
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*Mystic Seaport Museum, Inc. Mystic, Connecticut*  
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*Project abstract*

Mystic Seaport Museum, the Smithsonian Institution and the Hart Nautical Collections at Massachusetts Institute of Technology will undertake a cooperative training program in the application of coordinate measuring machine technology to document three- dimensional half models in their



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collections. The project will promote the use of modern technology to measure complex shapes faster, safer, more accurately and more economically. A workshop to train other museums in the use of this technology will be held at completion of the project.

*Project significance*

The preservation challenge posed by half-models is encountered by museums throughout the world. Establishing a means for accurately documenting half-models without risk to the artifacts will benefit a broad portion of the preservation community. Since coordinate measuring machine technology is relatively inexpensive, non- destructive, and can be applied to any three-dimensional object, it has great potential for use by museums, universities and other institutions. In their search for ways to handle an expanding workload with shrinking staff and funding, training in the use of new technologies becomes critically important.

Investing in the Past: Informed Decision Making for Historic Preservation in the Private Sector

*The Wilkinson County Museum Woodville, Mississippi*

\$19,883

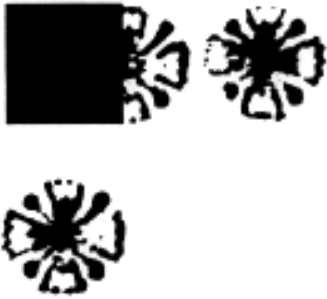
*Project abstract*

The Wilkinson County Museum will conduct a one-day seminar to provide an overview of preservation methodologies and strategies. Designed for owners of historic properties, the seminar will develop stewardship of buildings and collections in the private sector. The seminar will consist of lectures supplemented by visits to sites that will serve as case studies.

*Project significance*

This seminar will help people in the private sector understand preservation issues and the choices and solutions available to them. This pilot program will produce a course outline and related support materials suitable for use in a variety of locations.

Youth training program in vernacular earthen architecture



and associated cultural traditions *Cornerstones Community Partnerships*

*Santa Fe, New Mexico*

\$39,868

*Project abstract*

A twelve-week hands-on training program will be conducted for sixteen Native American and Hispanic youth in maintaining vernacular earthen structures. Along with strong emphasis on cultural traditions, the course will develop preservation skills, heighten cultural awareness, and improve self-esteem. Preservation and maintenance skills will be demonstrated on historically significant structures and important oral traditions will be communicated to a new generation.

*Project significance*

This training program aims to reinforce the young person's connection to community and to provide an introduction to marketable construction skills. It strives to strengthen traditional cultural values that promote overall community strength and dedication through cooperative work and inter-generational teaching.

The project will provide a model for preserving historic vernacular earthen architecture focusing on examples from Spanish Colonial and Native American cultures. This architecture is threatened because the community-based system that maintained these buildings is dying and the self-reliance and cohesiveness of rural communities is increasingly diminishing.

The curriculum resulting from this partnership project will provide a basis for other national efforts.

Preservation Training for Local Governments

*Georgia Department of Archives and History*

\$40,000

*Project abstract*

The Georgia Department of Archives and History will conduct a

multi-faceted outreach training program to address issues of concern to custodians of local government records in Georgia's 159 counties. This pilot project will serve

as a model that can be replicated by state governments throughout the United States. Highlights of this program include six regional day-long training workshops over the course of one year, follow-up consultations for program attendees, and production of technical information leaflets.

*Project significance*

The fates of public records and the buildings that house them are inseparably intertwined. While local officials may understand the importance of preserving an historic county courthouse, the officials often are less informed about the value of the documents housed inside that structure. This training program seeks to integrate these two aspects of conserving public records.

Problems facing local governments in attempting to preserve their historical records are not limited to one state or county. The information presented in these model training programs and the resultant sharing of problem-solving expertise can be applied nationally.

Better informed public officials will make more enlightened decisions about their records and the structures in which their records are housed.



**Heritage Landscape**  
*Morgan County Landmarks Society Madison, Georgia*  
**\$6,937**

*Project abstract*

The Morgan County Landmarks Society will enhance existing Heritage Education Teacher's Manuals with additional primary source materials focusing on historic landscapes of Madison and Morgan County. These landscapes will be documented in photographs and video. Research will include archival sources and oral histories. ~

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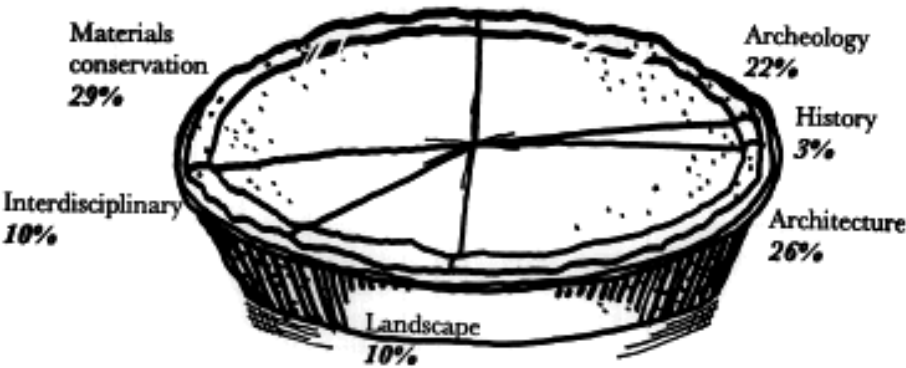
*Project sign.ificance*

The Morgan County Landmarks Society will involve students in documenting landscape features in the community and in preserving historic landscapes. The project will increase students' awareness of their responsibilities in preserving the world



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17ze 1995 PITGrants pu, by discipline

around them and will provide an example of how heritage education works.

Construction technology manual for historic buildings in Puerto Rico and the Caribbean  
*Caribbean Heritage*  
*Guaynabo.. Puerto Rico*  
**\$34..830**

*Project abstract*

Caribbean Heritage will produce a manual for professionals in the construction industry who lack formal training in preservation. The manual will include graphics and photographs that clearly illustrate historic construction techniques and preservation fundamentals. Case studies of recent preservation projects in Puerto Rico and the Caribbean will supplement the text. The *Secretary of the Intl7ior's Standards for Rehabilitation* will be cited in the handbook and the information presented will conform to the *Standards*.

*Project significance*

Puerto Rico and the Virgin Islands fall within the jurisdiction of the National Park Service's Southeast Field Office, and are guided by the same Federal regulations that safeguard historic properties nationwide. Caribbean Heritage's manual will be a valuable resource to preservation efforts in the Caribbean. The manual will increase preservation awareness in the region, and will promote an inter-islands exchange of technical information between

preservation professionals **and** construction professionals.

1995 PTTGRANTS  
IN RESEARCH

**Investigating the use of silicones for the treatment of wet or waterlogged organic materials**

*Nautical Archaeology Program, Texas A&M University*

**\$39,641**

*Project abstract*

Wet or waterlogged organic materials excavated from underwater archaeological sites often require treatment with bulking agents to prevent collapse of their internal cellular structure during drying. This project will investigate silicone oils as an alternative to conventional bulking agents for the treatment of organic materials including wood, leather and various plant fibers. Silicone oils possessing different molecular weights, viscosities, and requiring different catalysts, will be tested. The long-term stability of silicone-treated materials will be assessed following accelerated ageing. Other investigations will include the compatibility of silicones with conventional bulking agents such as polyethylene glycol, and the use of silicones for the preservation of glass and other siliceous materials excavated

from underwater sites.

*Project significance*

The preservation of waterlogged materials excavated from archaeological sites is an expensive, time-consuming exercise. Conventional bulking agents frequently require prolonged immersion times to achieve adequate penetration and often exhibit poor long-term stability. New treatment methodologies are needed to overcome these difficulties. The use of silicones is a particularly viable alternative worthy of consideration given their inert properties and superior penetration of organic and siliceous materials.

**Investigating the use of turn-of-the-century whitewares as economic indicators for evaluating sites for National Register eligibility**

*Ohio Historical Society.. Ohio State Historic Preservation Office*

**\$10,394**

*Project abstract*

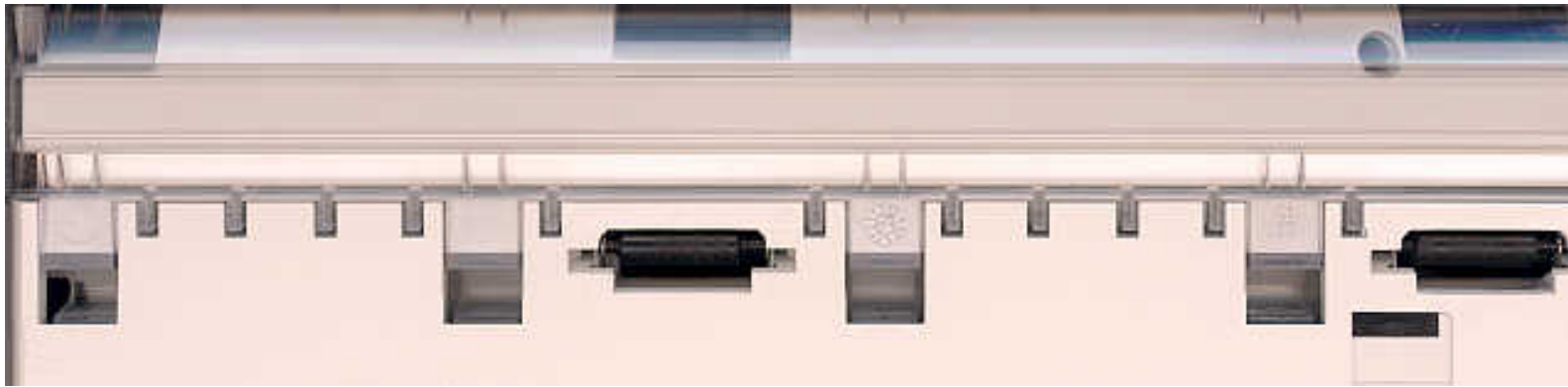
Historic sites dating from the late nineteenth and early twentieth centuries frequently yield large assemblages of whiteware sherds. These assemblages are the physical remains of human consumption patterns. As such, comparative analysis of whiteware sherds from suitable collections can provide important information on the socio-economic status of the turn-of-the-century consumer. This project will survey a number of extant collections to determine if whiteware assemblages can be used as models for socio-economic indicators. The results of this survey will provide data for the development of a basic guideline for assessing the significance and value of these collections, with particular regard to their sites' National Register eligibility.

*Project significance*

There is a critical need for methodologies to assess archaeological sites that lack standing architecture and where artifact assemblages are the only physical evidence of the sites' occupants and activities. Comparative analysis of artifact assemblages such as whitewares often is neglected as a research tool and rarely is considered in National Register eligibility assessments. Such analysis can



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significantly augment the archeological record by providing a basis for measuring relative socio-economic status patterns.

Investigating relationships between heritage preservation and economic development in rural areas using the Bayou Teche Heritage Corridor as a model

*Office of Community Preservation, Louisiana State University*  
\$39,978

*Project abstract*

This project will develop a computer-based multimedia system for managing, conserving and interpreting resources in the lower Mississippi Delta region. This information management system will focus on the Bayou Teche Heritage Corridor, a nationally-recognized area containing significant cultural and natural resources. Data on the cultural and natural history of the historic Bayou Teche region will be included as well as relevant resource management strategies, research, legislation, policies and threats. The information management system will be installed on the Louisiana Heritage Information Network and will be used to promote social and economic development through heritage awareness. The various uses of emerging electronic technologies for economic and community development through heritage conservation and education will be explored.

*Project significance*

There is a critical need for new tools for the management, conservation and interpretation of endangered cultural heritage resources. The information management system developed for the Bayou Teche Heritage Corridor will serve as a model for other national and international heritage conservation organizations seeking to adapt computer technologies to resolve critical information needs. This database will provide an opportunity to undertake a true interdisciplinary approach to social and economic development that emphasizes the benefits of heritage preservation in distressed regions--such as the lower Mississippi Delta--that suffer from high rates of unemployment, poverty and

illiteracy.

Field testing remote sensing systems for the protection of historic and prehistoric sites and monuments from vandalism

*Preservation Science and Technology Unit, University of California at Riverside*  
\$40,000

*Project abstract*

This project will evaluate a prototype remote sensing system for monitoring and responding to human intrusion in arid environments that have significant cultural and natural resources. The system primarily is designed to protect against vandalism. Alerted by sensor activation, law enforcement can see and hear activity at the remote site, and can respond to observed intrusion. The system will be field tested at Joshua Tree National Park at a frequently vandalized site possessing significant Native American ceremonial, historic, and prehistoric components. Cost savings through efficiency and reliability of operation will be demonstrated.

*Project significance*

Looting and vandalism of public and private cultural properties in the United States is recognized as one of the greatest problems confronting the preservation community. Though the legal foundation for protecting historic and prehistoric resources is in place, new and more efficient technologies are needed for discovering and apprehending individuals who continue to loot and vandalize sites and monuments.

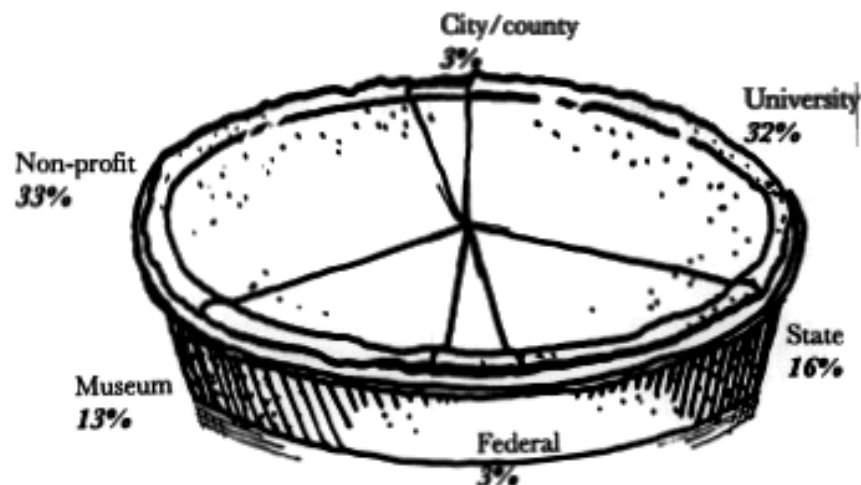
Researching the use of oral histories to interpret African-American theaters in the South

*City of Macon, Georgia*  
\$39,988

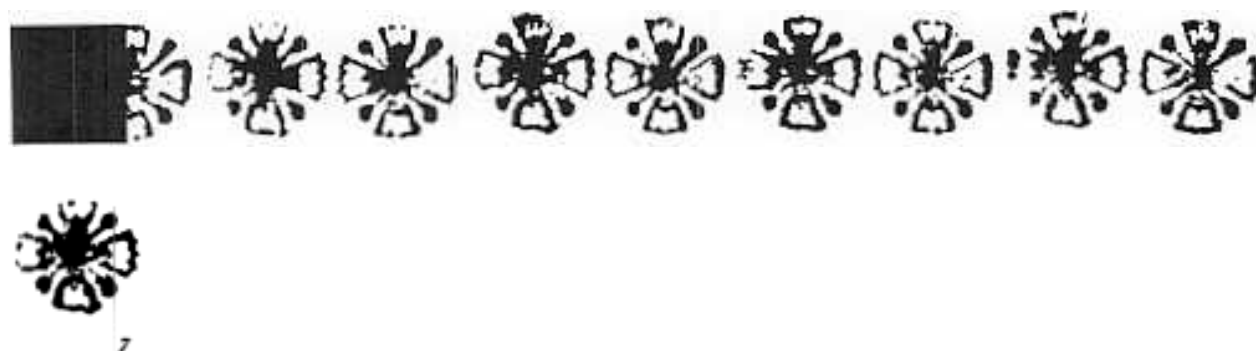
*Project abstract*

This project will collect oral histories and reminiscences of former performers, employees and patrons of the Douglass Theater in Macon, Georgia, as well as other African-American theaters in the South. Built in 1921, the Douglass

Theater presently is undergoing extensi restoration and is one of the few remaining theaters that offered segrega programming to Mrican-Americans in the South. Oral histories associated wi the Douglass Theater and other theate will be used to better define and interpr t the role that theaters played in Mrican-American culture when racial segregati n prevailed in the South. The relationshi between local or regional theaters and nationally recognized theaters also will explored.



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#### *Project significance*

Accurate interpretation of historic Mrican-American cultural resources continues to be a challenge. Many of these resources, such as local theaters, are not well documented and, as a result, their impact upon the development of Mrican-American heritage and culture is unknown. Interpreting the historical significance of the Douglass Theater and similar establishments in a regional or national context will make the acquisition and restoration of other Mrican-American theaters across the United States more desirable and compelling.

#### **Designing protective coating systems for outdoor bronze sculpture and ornamentation *National Gallery of Art***

**\$37..500**

#### *Project abstract*

This project will design and test new protective coating systems for the preservation of outdoor bronzes. Multilayered coatings designed according to industry principles of three- part systems, will be used as model systems to study the mechanisms of coating failure and to optimize coating performance for conservation applications. Research will focus on the role of adhesion between organic coatings and the metal substrate, as well as conservation issues of aesthetics, maintenance, and removability in coating design. Surface analytical and materials science methods will be used to chemically characterize metal-to-coating interfaces, and to test physical properties of coatings.

#### *Project significance*

There is a widely recognized need for improved performance of protective coatings applied to bronze sculpture exposed to aggressive outdoor environments. Few studies have been conducted that take into consideration conservation applications that frequently require coatings to be applied to corroded, non-homogeneous surfaces. To date, the limited research on protective coatings for bronze sculpture

is inconclusive given our poor understanding of coating failure when coating systems are tailored to conservation applications. High- performance protective

coatings for use in conservation are needed that can be tested and evaluated according to coatings industry standards.

**Developing agent-based computer simulations for identifying and interpreting archaeological sites**  
*Washington State University*  
**\$35,463**

*Project abstract*

This project will develop a prototype simulation of archaeological site location, growth, and demise in the Four Corners region of the Southwest using *Swarm*, a general purpose computer simulation platform designed for the study of complex systems and emergent phenomena. This system permits the simulation of a large number of autonomous agents interacting with one another and with a dynamically changing environment.

This will be the first attempt to use *Swarm* to model human social and spatial dynamics and one of the first to attempt an agent-based simulation of a prehistoric population.

*Project significance*

Predictive modeling of the location of archaeological sites and features usually proceeds inferentially by estimating distributions on a landscape from a sample of that landscape. This approach has been faulted for failing to provide insight into the processes generating those distributions. Explanatory models of site location and use that are developed with the aid of agent-based simulations will greatly enhance archaeologists' ability to discover and interpret archaeological resources within their environmental and social context. Over the long term this approach will help us to understand prehistoric human behavior and predict the location of archaeological resources.

Evaluating the impact of revegetation on the preservation of archeological sites

*Center for Archaeological*  
*Stabilization.. University of*  
*Mississippi*  
*\$20.. 000*

*Project abstract*

This project will study the impact of revegetation on long-term preservation of archeological sites. Revegetation will be analyzed at three sites possessing well- documented histories of archeological excavation, rehabilitation and agricultural use. Particular attention will be devoted

to assessing the effect of pesticide migration across the stratigraphic profile and possible pesticide deposition on buried artifacts. Subsurface artifacts will be analyzed for pesticide residues as well as contemporary surface collections. Previously excavated material associated with these sites also will be analyzed. Soil samples will be collected from each site to provide comparative data for each of the artifact collections. Root systems also will be studied to determine how different plants contribute to the migration and deposition of pesticides across stratigraphic profiles.

*Project significance*

Revegetation is a widely employed method for stabilizing archeological sites against natural erosion. Few studies, however, have sought to evaluate the physical changes and changes in soil chemistry that result from revegetation, and the impact of the changes on the long-term preservation of buried artifacts and other archeological features.

**Preparing a directory of chemical spot tests for materials characterization**  
*University of Arizona, Arizona State Museum*  
**\$28,310**

*Project abstract*

This project will develop a directory of chemical spot tests for the qualitative analysis of a range of archeological materials. The tests also will be used to characterize associated accretions and deposits as well as other materials contextual to the artifact. The directory will be designed for use by practicing conservators with an emphasis on



simplicity, ease of application and interpretation of test results. Test protocols will be independently evaluated and developed into a standard format.

*Project significance*

Simple, cost-effective methods of characterizing archeological materials are needed by practicing conservators working in the field. While a number of chemical spot tests have been published in the scientific literature, only a few have been developed specifically for the purpose of characterizing archeological materials. Of these, most require some level of technical expertise in conducting and interpreting the results of the spot tests. A simple, non-technical directory of chemical spot tests will be of great value to both archeology and architecture.

Analyzing the effect of an indoor air pollutant on traditional easel paintings

*Indiana University Art Museum, Indiana University*

\$38,815

*Project abstract*

This project will study the effect of diethylaminoethanol, a volatile corrosion inhibitor widely used in museum humidification systems, on traditional easel paintings. Short-term exposure to diethylaminoethanol is known to cause softening and pitting of the varnish layers, resulting in a disturbing haze. It is possible that over time surface deposits of the inhibitor may penetrate the varnish and react with the underlying paint layers catalyzing hydrolysis or oxidative degradation of the oil, tempera or acrylic media. Using natural and artificially contaminated painted surfaces as samples, studies will be conducted to determine if diethylaminoethanol can penetrate the surface of coated and uncoated paintings and react physically or chemically with the underlying paint surface. Studies also will be conducted to determine if the inhibitor can be removed safely from the varnish or paint surface using conventional solvents.

*Project significance*

Humidification systems that require anti-corrosion chemicals such as

diethylaminoethanol are in wide use in museums across the United States. Contamination problems resulting from the use of diethylaminoethanol have been reported and it is expected that over time more museums will encounter similar difficulties. A critical study of the effect of diethylaminoethanol on paint media is needed to minimize any negative impact that results from prolonged exposure to diethylaminoethanol.

Investigating the biogeochemical relationship between prehistoric rock paints and natural rock accretions

*Newberry College*

*Newberry, South Carolina*

\$29,070

*Project abstract*

Prehistoric rock paintings are active biogeochemical systems. In order to develop a viable conservation strategy for their long term preservation, it is essential to understand the relationship between the prehistoric paints and natural rock accretions that frequently encapsulate them. This project will study this relationship using pictographs found in the Lower Pecos Region of Texas as

examples. The Lower Pecos region of Texas contains some of the most outstanding examples of prehistoric art in the world. In many cases the prehistoric paints are encapsulated by a natural accretion composed primarily of the calcium oxalate mineral, whewellite. The chemical composition and date of formation of the accretion will be analyzed, and a model describing the formation and evolution of the accretion will be developed.

*Project significance*

Informed conservation strategies are needed to ensure the long-term preservation of prehistoric rock art. In order to develop these strategies a more comprehensive description and understanding of the natural rock accretions associated with pictograph is needed. Rock accretions associated with the deterioration of the Lower Pecos pictographs are typical of those that occur at many prehistoric sites, and this study will have a direct impact on the preservation of ancient rock art both here and abroad.

Analyzing the economic impact

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historic preservation in our



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nation's most densely  
populated State  
*NewJersey Historic Trust*  
\$40,000

*Project abstract*

The New Jersey Historic Trust will undertake a comprehensive statewide study to document and quantify the role of historic preservation in the State's economy. The current impact of tourism and increases in employment, tax revenues, and real estate valuation that result from the creation of heritage districts or rehabilitation projects will be measured. The study will also include an assessment of such "quality-of-life" effects as community stabilization, safety, infrastructure cost savings, and reduced environmental degradation. Collected data will be comprehensively analyzed and recommendations will be formulated towards encouraging the integration of historic preservation and incentives for historic preservation into the State's economic development policies.

*Project significance*

Few economic impact studies have been conducted that provide clear, measurable indicators of the roles that historic preservation play in a state's economy. Public policy debate now focuses more readily on the cost and benefits of government programs. By compiling empirical evidence that documents the economic benefits of historic preservation initiatives--whether through direct public subsidies or tax incentives, or as a by-product of regulation or marketing-the case for historic preservation will be strengthened. A comprehensive research methodology for New Jersey will provide a model that can be adapted readily by other states and regions.

Documenting the movement of historic objects using advanced  
computer simulation technologies  
*National Preservation Institute*  
Washington, DC  
\$36,000

*Project abstract*

This project will model various  
operational features of a Civil War-era

ironclad, the *ass Monitor*, using advanced computer simulation and visualization techniques commonly employed in naval ship design. Visualization and hydrodynamic models of the *ass Monitor* will be created using reproductions of original drawings, photographs and other documentation to ensure historical accuracy. The computer model will be tested under various sea and weather conditions. Conformance to HABS/ HAER standards will be attempted. These trials will illustrate how computer simulation technologies can be used to augment the documentation of historic objects.

*Project significance*

Few attempts have been made to document precisely the movement of historic objects, particularly maritime properties. Recent advances in computer simulation have greatly enhanced our ability to model operational features thus adding a new dimension to documentation and greatly expanding our understanding of the purpose and function of historic objects.

Developing a conservation inventory of Frank Uoyd Wright structures

*Frank Lloyd Wright Building*

*Conservancy*

*River Forest, Illinois*

\$30,000

*Project abstract*

This pilot study will create an initial database on past and future conservation work on buildings designed by Frank Uoyd Wright in the United States. For each building, the database will include the names of all individuals who have worked on the structure as well as associated treatment reports and conservation assessments. Historical information on the design and construction of the building also will be included. This data will be used to assess future conservation or maintenance projects and to create and assist a national network of public and private owners of Frank Uoyd Wright buildings in the United States.

*Project significance*

Frank Uoyd Wright, an Ameri architect acclaimed throughout the w rld, left a legacy of over 400 significant buildings that exist today in various s tes of preservation. To ensure the long-te survival of these buildings, owners and property managers need information the history of each building's preserva on and sound conservation practices. Th also must be motivated to utilize this information to solve J1laintenance and conservation issues. The development f a conservation inventory to will encourage proper care for these buildi gs and will go a long way towards informing, involving and motivating owners and property managers. The findings will be applicable to a broad range of historic structures and the methodology can be adapted to chroni le the preservation experience of other groups of buildings.

Field testing a non-invasive, non- toxic baiting systelD for protectin historic structures froID subterranean termites l

L

*Ft. Lauderdale Research and Education Center, Universit)l of*

*Florida*

\$40 000 j:

, ~ *Project abstract* ;1

An insect monitoring station incorporating a bait matrix containing the insect growth regulator, hexaflumuron, will be tested for controlling subterranean termites in historic structures and landscapes. Recent laboratory and field studies have established the efficacy ofhexaflumuron against *C.jo17nOsanus* and *R. Flavipes* whe introduced as a bait. Both in-ground an above-ground baiting procedures will be used to delineate foraging territories and to eliminate active infestations. Field trials will be conducted at historic sites and monuments and the potential for widespread application will be determined. 'f'!!!:

*Project sign.ificance a,L*

Historic structures and landscapes nationwide are vulnerable to termite infestations. Unfortunately, the use of





conventional chemical insecticides for the control of termites in historic structures poses ethical dilemmas and technical difficulties. Often the structure and landscape must be significantly altered to apply the termicide properly. The use of baits containing a slow acting toxicant against termites is an emerging technology and, if successful, may drastically reduce pesticide usage with minimal impact on historic structures or landscapes.

Designing a controlled archeological test site for evaluating non-invasive technologies for archeological site assessment

*Tri-Services Cultural Resources*

*Research Center, U.S. Army Construction Engineering Research Laboratories*

\$37,250

*Project abstract*

This project will construct an archeological test site to evaluate non-invasive technologies-remote sensing and geophysical prospection-for archeological site assessment. The test site will contain a number of commonly encountered archeological features including artifacts at varying depths, densities and soil conditions. Features will be mapped in three dimensions to allow comparison of the sensitivity and reliability of various non-invasive assessment techniques. A cost benefit analysis also will be conducted to allow

comparison between non-invasive techniques and traditional excavation.'

*Project significance*

Cost effective and reliable meth

of assessing archaeological sites are desperately needed to aid the time-consuming and expensive process of determining National Register eligibility. The use of non-invasive techniques for archeological site assessment is promising, though the absence of standardized methodologies for quantitatively evaluating their reliability, sensitivity

cost effectiveness has limited their application. A controlled test to evaluate and compare new and existing technologies will greatly refine the selection of appropriate non-invasive assessment techniques.



*Fifteen projects received PITGrants support*

*in 1994; some projects are completed and the balance of the projects is underway. The 1994 PITGrants awards were announced in the March/April 1995 Notes from the Center, and the 1994 projects are included in this edition of Notes to keep our readers posted on the progress of our PITGrants work.*

*The 1994 PITGrants projects in training began in Fall 1994. Some projects are completed and the balance of the projects are well underway. The 1994 PITGrants projects in research began in late Fall of 1994 and, except as noted below, are due for completion at the first of the year in 1996.*

*Project results of the 1994 PITGrants will be summarized in future editions of Notes from the Center, and full versions of project results will be available from Frances Gale and Mark Gilberg, in care of NCPTT.*



Conducting a Native Americans

and Archeology workshop

Arizona Archeological Council

\$6,470

The workshop was held in November 1994, and the transcription of proceedings is nearly completed.

**Conducting workshops for methods of archeological site discovery and evaluation**

**Society for American Archeology and National Park Service-Archeological Assistance Division**

\$39,600

Workshops were held at the SAA annual meeting in Minneapolis in May 1995. As follow-up, SAA and AAD will prepare reading lists and lesson plans for similar workshops; these materials soon will be available through NCJYn".

**Creating a training video on preserving historic landscapes:**

***America's Landscape Legacy***

*American Society of Landscape Architects*

\$20,000

Filming will be completed in Spring 1996 with post production work to follow. The film will premiere at ASIA's October 1996 annual meeting.

**Designing an interactive**

**multimedia training program for advanced mapping technologies**

*US Department of the Interior-Bureau of Land Management*

\$40,000

Design of the training program is underway, with an anticipated completion date of February 1996.

**Developing a survey,**

**teleconference and training manual on preserving historic public works projects**

*American Public Works Association*

\$39,200



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The survey will be conducted during Fall 1995, and the teleconference and training manual will be completed by May 1996.

**Editing proceedings of *The Uses of Garden Archaeology* conference held in London, England in Summer 1995**

*US Committee/International Council on Monuments and Sites*

\$7,500

The conference was held in June 1995; proceedings will be published in the Spring 1996 edition of the *Journal of Garden History*.



**Developing a low-cost photogrammetric data archival system**

*Center for Advanced Spatial Technologies, University of Arkansas, Fayetteville*

\$37,428

**Developing guidelines for allowable temperature fluctuations in museums and historic properties**

*Conservation Analytical Laboratory, Smithsonian Institution*

\$39,779

This project is completed and results soon will be available from NCPIT.

**Investigating the effectiveness of protective glazing for historic stained glass windows**

*Inspired Partnerships*

*Chicago, Illinois*

\$33,320

**Developing efficient techniques for analyzing blood residues on tools from archeological sites**

*Conservation Analytical Laboratory, Smithsonian Institution*

\$37,254

**Developing methods and technologies for preserving woody plants in historic landscapes**

*Arnold Arboretum, Harvard University*

\$40,000

**Investigating improvements of existing heating and air conditioning systems in historic structures**

*New York State Office of Parks and Recreation*

*and Historic Preservation*

\$40,000

**Investigating the preservation of historic carved sandstone buildings in marine environments**

*Historic Preservation Commission*

*Monterey, California*

\$31,925

**Developing a database for the study of 20th century building materials**

*National Council for Preservation Education*

\$40,000

**Testing the energy performance of historic wood windows in cold climates**

*State of Vermont Division of Historic Preservation*

\$40,000

*Notes from the Center*

Fall Supplement 1995

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***Notes from the Center*** is published by the National Park Service's National Center for Preservation Technology and Training.

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